

# KNOWLEDGE

VOL. 2 / JANUARY 2008

OFFICIAL SAFETY MAGAZINE OF THE U.S. ARMY



## GET IN YOUR LANE

p. 5

DEVELOPING SAFE DRIVING HABITS

» **CHECK YOUR TREAD**

p. 10

» **DEEP IN IIMC**

p. 12

» **THE EYES HAVE IT**

p. 20



**KNOW YOUR CREW**  
SPEAK UP AND ASK QUESTIONS



ARMY STRONG



U.S. ARMY COMBAT READINESS SAFETY CENTER  
<https://csrc.army.mil>

OWE John  
**EDGE**

Leading on the Edge

# KNOWLEDGE

OFFICIAL SAFETY MAGAZINE OF THE U.S. ARMY

## contents

2 From the DASAF

4 From the CSM

5 Happy Trails!

16 When Crew  
Coordination Fails

22 Do You See What  
Eye See?

WHERE THE  
RUBBER MEETS  
THE ROAD

24 Don't Fall in Love with  
the Plan

28 Not This Time!

12 THERE I WAS...  
DEEP IN IIMC

30 Identify the Risks or  
the Remains?

32 Accident Briefs

Plus:  
pull-out posters

IT ONLY  
WORKS WHEN  
YOU WEAR IT



U.S. ARMY COMBAT READINESS/SAFETY CENTER

<https://csrc.army.mil>

Brig. Gen. William H. Forrester, Commanding Director of Army Safety

Col. Glenn W. Harp, Deputy Commander

Command Sgt. Maj. Tod L. Glidewell, Command Sergeant Major

Kelly Widener, Director of Strategic Communications

Taylor, Barbara, Editor-in-Chief  
Bob Von Elsberg, Managing Editor  
Paula Allman, Editor  
Chris Frazier, Editor

Blake Grantham, Graphic Design  
Leslie Tisdale, Graphic Design  
Karni Lisenby, Graphic Design

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# SURVIVE TO ARRIVE

**M**y job requires extensive travel, which means I'm often at airports throughout the U.S. and abroad. I swell with pride when I see young Soldiers at these airports, returning from deployed locations to the loving arms of their Families.

I often wonder how long they have been Soldiers, from where did they depart, where they are going and who they will meet. I also wonder if these Soldiers were prepared to travel and, more importantly, if they're prepared for what awaits at their destination.

Right or wrong, I somehow believe that Soldiers are best cared for when they are in the company of fellow Soldiers. Somewhere in my years of training and experiences with our great Army, I firmly believe that the best supervision a Soldier can have is in the unit, where there is

compassionate professional leadership to watch and protect. I portend that the NCOs and officers that either launched or stand ready to receive these Soldiers are best prepared to take care of them. Even knowing that 40 to 50 percent of the Soldiers I see are en route to a theater of conflict, I am convinced that where there is an engaged Leader, these Soldiers are protected.

We learned from our initial entry that there are two ironclad priorities in military operations that are engrained in us: mission accomplishment



WE

# LEADER'S ACCIDENT RISK ASSESSMENT OF SUBORDINATES

WILL ONE OF YOUR PERSONNEL CAUSE THE NEXT ACCIDENT?

Research has shown that leaders who are engaged in the reduction of accident caused by personnel are 80 percent more likely to prevent accidents than 80 percent of Army personnel. Leaders who are engaged in the reduction of accident caused by personnel are 80 percent more likely to prevent accidents than 80 percent of Army personnel. Leaders who are engaged in the reduction of accident caused by personnel are 80 percent more likely to prevent accidents than 80 percent of Army personnel.

## CONTROLS

Will one of your personnel cause the next accident? Research has shown that leaders who are engaged in the reduction of accident caused by personnel are 80 percent more likely to prevent accidents than 80 percent of Army personnel. Leaders who are engaged in the reduction of accident caused by personnel are 80 percent more likely to prevent accidents than 80 percent of Army personnel.



**ACCIDENT RISK ASSESSMENT FOR INDIVIDUALS**

I'm Sergeant Major of the Army Ken Preston and I want to thank you for your contributions to keeping our nation safe during the Global War on Terrorism. I ask for your help in keeping our Soldiers safe from accidents. As leaders, identifying and knowing those Soldiers who are high risk in your formation is essential to successful engagements to prevent accidents. It's already proven that disciplined leaders engaged at all echelons, immediately promote a safer operational environment. Standard based units are inherently safer units. Be a leader and be engaged. Use Army tools, such as the Individual Risk Assessments and the Army Readiness Assessment Program, specifically developed to help you know your Soldiers, your peers, your formation's safety climate and even your own high risk tendencies. Investing and understanding these areas can target your leadership and work to prevent the next accident.

*Kenneth O. Preston*  
Sergeant Major of the Army

and the welfare of our Soldiers. These priorities are as applicable in war as in peace. The honor of ownership and the responsibilities pertaining to the well being of those in our ranks lies with us. Within our formations, our Soldiers have battle buddies, NCOs and officers that attempt to ensure they

make it home safely from their deployment. However, I contemplated who at home serves as guardian? The answer is simple—you, I and Family members. As we build relationships with our Soldiers, we understand what makes them tick. Use tools such as the Leader's Accident Risk Assessment

of Subordinates and Accident Risk Assessment for Individuals to help identify individuals in your formations who might be at risk for an accident. Both assessments can be found on the USACRC Web site at <https://cra.army.mil>. You can mitigate risk factors if you are aware risk exists, and your chain of command can help. As Leaders, identifying and knowing your Soldiers is paramount to protecting them. You all should understand that as an Army having fought for six-plus years, daily executing Warriors task and drills, we can't allow

ourselves to think our only enemy is the one we engage on battlefields. As informed and engaged Leaders, we must remain focused on keeping our comrades safe with the same vigor we execute on the battlefield. I am proud of your Herculean efforts in protecting our Soldiers on both battlefronts, home and abroad. «  
**Thank you - and An Army Safe is An Army Strong!!**

*William H. Forrester*  
Brigadier General, USA  
Commanding

“As engaged **LEADERS**, we need to **ENSURE SOLDIERS** are **AWARE** of the **TOOLS/RESOURCES** made **AVAILABLE** to them.”



# MOVING LEFT OF THE BOOM ON MOTORCYCLE ACCIDENTS

**S**pring is the traditional start for motorcycle riding and, for many riders, Daytona Bike Week (Feb. 29 through March 9) marks the unofficial beginning of the season. Numbers indicate motorcycle sales have steadily increased over the years, and riding is a popular activity or mode of transportation among our ranks. As engaged Leaders, we need to ensure Soldiers are aware of the tools/resources made available to them.

The Chief of Staff, Army, now requires the Six Point Program developed by the U.S. Army Combat Readiness/Safety Center be used by all Army units. It is the minimum standard. This program requires command emphasis, discipline, composite risk management, standards and provides alternatives, as well as a commander's assessment. The focus of the program is engaged leadership through positive assertion of proactive measures and standards.

In fiscal 2007, there were 38 Soldiers killed in motorcycle accidents. Our data indicates that 65 percent of these motorcycle accidents involved Soldiers older than the age of 25. Of these mishaps, 60 percent involved Soldiers in the grade of E-5 or higher. What concerns me most about these numbers, aside from the horrific loss of life, is these fatalities include our senior noncommissioned officer

(NCO) ranks. In some motorcycle crashes involving fatalities, the sequence of events leading up to the incident indicate these deaths were preventable. Some of these incidents indicate that fatigue, drinking and lack of engaged leadership among fellow NCOs were paramount in the Soldiers death.

Department of Defense Instruction (DoD) I 6055.4 and Army Regulation 385-10, *Army Safety Program*, Chapter 11, state that Soldiers operating a motorcycle must complete safety training. It has been my experience that Soldiers believe that these regulations only apply when they are riding on post, which is not true. The regulation states failure to wear personal protective equipment or comply with licensing or operator training requirements is against the regulation.

Coupled with the Six Point Program, please remember to be

diligent and continue to move "left of the boom," not just in accident prevention measures, but in every way that involves the safety of Soldiers in our ranks.

In closing, safety is inextricably tied to readiness. To move "left of the boom," we must go beyond the lectures and instruction on risk management and ensure it is being practiced within our ranks. While risk management remains the basic process by which we can reduce accidents, remember engaged Leadership is the key to risk management.

As an aid, I encourage you to work closely with your safety professionals and visit our Web site at <https://cra.army.mil>, which contains helpful tools regarding motorcycle safety. The Motorcycle Safety Foundation also has some great tips available on its Web site, which can be found at <http://msf-usa.org>. <<

**Army Safe is Army Strong!**

*Lt. Col. L. Glidewell*

**Tod L. Glidewell**  
Command Sergeant Major  
U.S. Army Combat Readiness/Safety Center



I pulled out the map and looked at the route from our home south of Albuquerque, N.M., to Little Rock, Ark., where my parents lived. The trip was easy enough—go north on Interstate 25 for about 20 miles to Albuquerque, then turn right (east) on Interstate 40 for the next 880 or so miles.

Nine hundred miles was a bit far to go straight through, even if it was all on the interstate. Still, I was tempted to push the envelope and shoot for 650 to 700 miles. I figured if we made it that far the first day, we could make my parents' place in time for lunch the following day.

# Happy Trails!

BOB VAN ELSBERG  
U.S. Army Combat Readiness/Safety Center  
Fort Rucker, Ala.

Departure was typical for us—about two hours later than planned. Still, I hadn't given up my goal of putting as many miles behind us as possible. We crossed the eastern half of New Mexico and the Texas panhandle. It was dark as we entered Oklahoma City and I had a decision to make. I'd only covered about 550 miles—well short of my desired goal. I could pull off the road and try for lodging at Tinker Air Force Base, or I could keep pressing on. I should have stopped, but, like many guys, I was "goal oriented." I decided to drive 'til I dropped.

I maybe got 80 miles east of Oklahoma City when I hit the

wall. I was exhausted, my eyes were burning and things were turning blurry. I started looking for a place to spend the night, but the pickings were pretty slim. I'd pull off the interstate only to find "No Vacancy" signs glowing in front of almost every hotel. It was after 8 p.m. and other travelers had already snapped up the few rooms available. I was starting to think we might have to sleep in the car when I finally found a place. We checked in, dragged our bags to the room, showered and collapsed into bed.

I'd like to say we slept in the next morning to recuperate—but we didn't. Still goal oriented, I got us back on



the road early with the intent of making up time. We got to my folks' house in Little Rock a little after 1 p.m., but we were "zonked" and spent most of the afternoon napping. I realized, belatedly, we'd have been better off had we stopped in Oklahoma City, gotten a good night's rest and arrived a bit later in the day. At least we'd have been awake to enjoy the first few hours of our visit.

**Be REALISTIC about the DISTANCE you can cover in a DAY. After EIGHT HOURS or so, you're starting to LOSE your EDGE behind the WHEEL.**



# STUCK ON THE ROAD AGAIN

Just because today's vehicles are the most reliable ever doesn't mean a malfunction couldn't strand you on the side of the road. For those unexpected occasions when your trip is interrupted by a breakdown, keeping a roadside emergency kit can be a real help. The folks at the National Highway Traffic Safety Administration recommend your kit contains the following:

- Cell phone
- First aid kit
- Flashlight
- Flares and a white flag
- Jumper cables
- Jack (and ground mat) for changing a tire
- Work gloves and a change of clothes
- Basic repair tools and some duct tape (for temporarily repairing a hose leak!)
- A jug of water and paper towels for cleaning up
- Nonperishable food, drinking water and medicines
- Extra windshield washer fluid
- Maps

Do you see yourself in this story? Have you, like me, ever pushed it on a Family trip only to realize you lost more than you gained? Here are some tips I have learned from experience and also gleaned from the U.S. Army Combat Readiness/Safety Center's POV Toolbox and Travel Risk Planning System (TRIPS) program. You can also check out TRIPS online at <https://cra.army.mil>. Click on DRIVING/POV to access TRIPS.

## Good Trips Are Planned.

• Be realistic about the distance you can cover in a day. After eight hours or so, you're starting to lose your edge behind the wheel. If it takes longer than that to get to your destination, identify a good stopping point and make reservations before leaving on your trip. Also, don't count on being able to average the speed limit on the interstate. Stops for gas, food and

occasional rest breaks—not to mention delays caused by accidents, road construction and traffic congestion in large cities—will reduce your average speed. A more realistic average is one at least 10 mph under the speed limit.

## Got Kids?

• Make sure they're safely restrained in a child safety seat or wearing seat belts if they're old enough.





• Set the example by always wearing your seat belt.

• Bring along a few favorite books or soft toys to keep them entertained and occupied. They'll enjoy the trip better and so will you if they're not asking, "Are we there yet?" every five minutes.

### Don't "Tough Out" Fatigue.

• Your body's time clock is geared toward a consistent rest cycle that no amount of caffeine, cold air or loud music can effectively change. If you try pushing that envelope, you can experience something called "microsleep." Microsleeps can be as short as two or three seconds or last for several minutes. How do you know if this is happening to you? If you're having "head snaps" or if you're going down the road and suddenly can't recall how you got where you are, you could be suffering microsleeps. People experiencing this have

been known to go through red lights or fail to turn when entering corners.

### A Little PMCS, Please.

• It's OK for you to be bald, but not your tires. When they're out of tread, you're out of traction—especially on rain-slicked roads. If you stick a penny into your tread and see the top of Lincoln's head, it's time for new tires. Also, check your air pressure. Underinflated tires build up more heat and are more likely to fail. Follow your vehicle manufacturer's recommended tire pressures—usually listed on a sticker inside the doorframe—not the maximum recommended on the tire's sidewall. Your vehicle's



suspension was designed to provide optimum handling at the vehicle manufacturer's recommended inflation levels (see the related article "Where the Rubber Meets the Road" on page 10).

• Give yourself a "brake"—if your pedal goes more than halfway to the floor, your brake system needs service. If your pedal pulsates during normal



Not sure which booster seat or child safety seat is right for your kids? Check out the National Highway Traffic Safety Administration's suggestions online at [www.nhtsa.gov](http://www.nhtsa.gov).







# RESTRAIN YOUR KIDS, PLEASE!

braking, your discs may be warped and need to be turned or replaced.

- Can you see and be seen? Is your windshield scratched, pitted or cracked? Not only are damaged windshields harder to see through, but badly cracked ones can weaken your roof, making it more likely to crush during a rollover crash. How about your wiper blades—do they clean the windshield clearly or do they leave streaks? Do both of your headlights work? You can't avoid trouble if you can't see it. How about your tail, brake and turn lights? If you can't signal, other drivers can't safely react to what you're going to do.

- Check the vitals under the hood—especially your oil, coolant, transmission and brake fluid. Make sure they're filled to the proper level and keep some extra in your vehicle—just in case. Check your radiator and heater hoses for cracks and keep a roll of electrical tape with you. Wrapping electrical tape around a leaking radiator hose can provide a temporary repair until you find a service station.

There is an old saying that goes, "Getting there is half the fun." If you're traveling with your Family this spring, why not make the drive part of the pleasure? ◀

**The National Highway Traffic Safety Administration offers the following four tips on protecting your young children when they ride in your vehicle:**

- For the best possible protection, keep infants in the backseat in rear-facing child safety seats as long as possible up to the height or weight limit of the particular seat. At a minimum, keep infants rear-facing until a minimum of age 1 and at least 20 pounds.

- When children outgrow their rear-facing seats, they should ride in forward-facing child safety seats in the backseat until they reach the upper weight or height limit of the particular seat (usually about age 4 and 40 pounds).

- Once children outgrow their forward-facing seats, they should ride in booster seats in the backseat until the vehicle's seat belts fit properly. Seat belts fit properly when the lap belt lays across the upper thighs and the shoulder belt fits across the chest (usually at age 8 or when they are 4 feet 9 inches tall).

- When children outgrow their booster seats, they can use the adult seat belt in the backseat if it fits properly as described above.

For more information about Child Passenger Safety Week and the proper use of booster seats, please visit [www.nhtsa.gov](http://www.nhtsa.gov).

# where the rubber meets the road

**BOB VAN ELSBERG**  
U.S. Army Combat Readiness/Safety Center  
Fort Rucker, Ala.

**T**here's an old saying that goes, "They don't make cars like they used to." Well, that's true. These days, they make them a lot better. They also make tires a lot better than they used to and some are now sold with limited warranties as long as 80,000 to 100,000 miles. Still, unless you trade in your car for a new one every two or three years, you're probably going to have to buy a new set of tires for your vehicle.



For some people, that might seem like a pretty easy decision—just replace the tires with the same size that originally came on the vehicle. For others, that decision can be a bit more complicated, especially if they want different performance or wear characteristics than provided by the original tires. And for those who've bought used cars, there's a good chance they don't know what kind of tires the vehicle originally had.

Why should this even make a difference? If you put the same size and type of tire (passenger, performance or truck) you had on your vehicle previously, won't it handle the same? Maybe—but maybe not.

For instance, I'd put more than 50,000 miles on a set of Goodyear tires I had on a Toyota compact truck and noticed the tread was getting pretty shallow. My dad—a former long-haul truck driver—had often reminded me “your tires are your life.” With that tape playing in the back of my mind, I decided not to wear out the last bit of tread trying to get every possible mile out of the tires. I'd already driven on some rain-soaked roads and felt the traction getting a bit “iffy.” Since it's a lot cheaper and less painful to be safe than sorry, I bought a new set of tires, albeit from a different manufacturer. The tread design promised good traction in bad weather conditions.

As I drove home for the first time on my new tires, I discovered some drastic changes in my truck's handling. The power steering felt extremely light—so much so that I began to wonder if I had some play in my steering. However, I tested the steering and didn't find any play or looseness. What I did find, though, really got my attention.

My earlier set of tires had a 35-psi maximum inflation pressure, and Toyota recommended the front tires be inflated to 29 psi. The new tires I bought, while

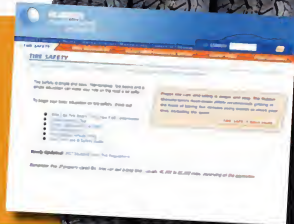
the same size as those I'd replaced, had a maximum inflation pressure of 44 psi. When they were mounted on my rims, all four tires were inflated to that maximum pressure. That higher inflation pressure reduced the tires' rolling friction, making a noticeable difference in my truck's handling. My steering became so sensitive that I couldn't keep my truck centered in my lane. I felt like I was driving a different vehicle—and that made me a bit uncomfortable. On the way home, I found an isolated section of road and practiced making rapid lane changes and dodging imaginary obstacles. I didn't want to be surprised by my truck's handling if I suddenly faced an emergency on the road.

After talking to the tire dealer and the local Toyota dealership, I reduced the tires' inflation pressures to bring them in line with Toyota's recommendations. My truck's handling returned to normal. The next time I bought a new set of tires, I made sure their maximum inflation pressure was 35 psi—a level much closer to what Toyota recommended for my vehicle.

This experience taught me that automakers include tire inflation pressures when they engineer the steering and suspension systems in their vehicles. When you change that engineering through ignorance or to have the coolest looking or toughest tires, you're changing how your vehicle's “rubber meets the road.” If you change things dramatically enough, that rubber might be a skid mark leading to a pile of crumpled metal. With your life riding on your tires, can you afford to make the wrong choice? ◀

## FYI

Do you get confused trying to understand all the information on a tire's sidewall? Do your tires seem to be wearing abnormally or vibrating as you drive? Check out the Rubber Manufacturers Association Web site at [http://www.rma.org/tire\\_safety/](http://www.rma.org/tire_safety/) for tips on tire safety. Also, just in case you wanted to know, April 20 through 26 is National Tire Safety Week.



# THERE I WAS DEEP

*This is a brief account of what happened to my co-pilot/gunner (CPG) and me the night we entered inadvertent instrument meteorological conditions (IIMC).*

**T**he night's task was an AH-64D Readiness Level-3 (RL-3) progression local area operation (LAO) including as many night and night vision system (NVS) base tasks we could complete within our three-hour period of instruction. This was our fourth flight together as a crew. Our three previous missions, flown during the day with an hour of hood training, had gone smoothly.





# 3... IN IIMC!

**CHIEF WARRANT OFFICER 3 BRIAN K. CALHOUN**  
P Troop, 4/3 Armored Cavalry Regiment  
Fort Hood, Texas

My CPG had more than 300 hours in Army aircraft with upwards of 100 hours of experience with night vision systems. On this mission, he was the pilot. By comparison, I had 1,600-plus hours in Army aircraft with more than 700 hours of NVS time. During this mission, I was the instructor pilot (IP).

Here is the rest of the background for the flight:

■ **Notice to Airmen:** Grey Army Airfield

precision approach radar was out of service.

■ **Crew Rest:** The crew had more than 24 hours of rest the day before.

■ **Mission Brief:** Briefed and approved for low-level risk.

■ **Weather Brief:** Ceilings scattered at 5,000 feet with overcast at 7,000, visibility five statute miles with localized rain showers in the area. Winds were from the northeast at 10 to 15 mph, and we were told to expect reduced

visibility due to the rain.

We met three hours before takeoff for our mission brief and table talk. We covered all the standard crew brief topics, including local procedures for IIMC. A half hour past sunset, we departed Hood Army Airfield on a single-ship flight directly to the eastern side of Fort Hood for our terrain flight training. I was using night vision goggles (NVG) and my CPG was using the pilot night vision

system (PNVS) for better terrain identification. Upon arrival to the terrain flight area, we determined the rain had reduced visibility to an unsafe level for training. We exited the low-level area to transition to the western side of Fort Hood in anticipation of better weather conditions. When we arrived there we found light rain and good visibility; however, in the airspace corridors, I estimated the overcast ceilings

at 1,500 feet above ground level (AGL).

We arrived at a local dirt flight strip in the training area. For better situational awareness, we conducted terrain flight tasks in the area around the flight strip. After about 40 minutes of terrain flight and covering only a four-kilometer radius of the flight strip, the rain increased to a level that I couldn't see as well as I wanted to

with the night vision goggles (NVG). As a result, I changed to the target acquisition and designation system (TADS) while the CPG continued to use PNVs. After completing our training, we departed the flight strip for a local orientation flight of a nearby landmark, located just a few kilometers north of the flight strip, to help complete the LAO.

As we traveled


north at terrain flight altitude, I told the CPG that visibility had been reduced to less than one statute mile and it was time to return to Hood Army Airfield and call it a night. Within 30 seconds of making the call to return to base, the radar altimeter failed. I called on the area advisory frequency and informed everyone in the area that we were returning to base.

Another AH-64D pilot responded he was parallel inbound low level to the same checkpoint. Another aircraft, a CH-47,

called and said they were at checkpoint Henry, outbound to the terrain flight area, but they were going to turn back to Hood Army Airfield because of poor visibility. We were at 1,800 feet mean sea level (MSL) (850 feet AGL) on the inbound corridor five kilometers north of checkpoint Henry.

However, the CPG thought he saw the CH-47 converging on our aircraft at our altitude and called out, "Traffic 12 o'clock our altitude, turn left!" I responded, "I don't see it!" I was puzzled because checkpoint

**“TRAFFIC 12 o'clock our altitude, TURN LEFT!” I responded, “I DON'T SEE IT!”**



Henry was 20 degrees to our left. If there was any traffic, I would need to turn right. Because of the heavy rain, I turned 10 degrees right to see if I could get a better view from a different angle. Again, the CPG called out, "Traffic 12 o'clock our altitude, turn left!" I responded, "Negative, I don't see any traffic." The CPG announced very loudly that we needed either to turn left or break left. I thought he must have seen something so I turned left, banking between 60 and 90 degrees to avoid hitting the other aircraft.

We suddenly entered IIMC inside a cloud as we descended at more than 1,500 feet per minute. Although I experienced spatial disorientation, I was able to level the aircraft's lateral attitude and select Attitude Hold. However, by that time, the tail rotor had produced vertical lift and raised the Apache's tail. I selected my flight page on the multipurpose display and noted a 25-degree nose-low attitude, 56 percent torque applied and 130 knots true airspeed (KTAS). I noted our altitude was 1,100 feet MSL and that the terrain elevation

was 950 feet MSL.

I thought we were about to crash! I increased torque to 95 percent and pulled aft on the cyclic, producing a 20-degree nose-up attitude on pullout. We climbed to 2,000 feet MSL. The CPG announced, "Airspeed 08 KTAS, I'll take the controls if you need me to." I felt we were out of immediate danger and replied, "No, I have the controls." After applying forward cyclic and increasing airspeed, I executed the local procedures for IIMC. I called Grey Army Airfield Approach Control, declared an emergency and requested radar

vectors for global positioning system approach to runway 15. During our approach, we exited the clouds and had the runway in sight. We requested to break off the approach and returned to Hood Army Airfield, where we landed safely.

### **Lessons Learned**

This is not just another story; it is my story. I was the IP who almost didn't make it home that night. I was responsible for my flight and crew safety. The lesson I learned that night was to depend on myself, my skills and training.

Like my situation,

there may come a time when no one is available to help you make the right decision. That's when your memory, skills, training and faith in God will get you home safely. If you're a pilot, I urge you to invest the time to thoroughly study your manuals. One day your life might well depend on your knowing what to do.

Oh, remember the aircraft the CPG thought was coming at us? It was a light from a vehicle on the ground reflecting on the canopy glass—not a real CH-47. But I almost crashed my aircraft trying to miss it!

Fly safe! ◀

# WHEN CREW COORDINATION FAILS

**T**his article discusses my experience as an inexperienced aviator, unwilling to speak up when paired with a reckless, yet more experienced, pilot in command (PC). During our flight, we were faced with several life-threatening situations, all of which were initiated by the PC and never challenged by me. Like most accidents, there were several warnings that could've led to the destruction of an Army aircraft and, more importantly, the death of the crew onboard. Though no one was hurt during

this flight, my story is an example of how important it is for all crewmembers to identify the hazards and do what they can to mitigate and, if possible, eliminate those hazards before flight.

An aviator who lacks discipline can be more dangerous than any combat mission or emergency procedure. The aviator without discipline often takes unnecessary risks and demonstrates a mix of carelessness and invincibility that compromises not only his life, but the lives of his crew.

Most cockpits are


comprised of a pilot and a co-pilot. The PC/co-pilot relationship presents checks and balances, allowing one crewmember to speak up when danger arises in the cockpit. However, this is difficult when you put an experienced aviator, acting as a dangerous PC, with an inexperienced co-pilot.

## Dangers Seen Before Flight

As an aviator assigned to a VIP unit in Korea, it was common practice to

DAVID J. SCOTT  
1st Lt, USAF, USAF





receive last-minute mission changes, as well as last-minute crew changes. This meant one might be paired with a different co-pilot than originally planned if the situation dictated. However, a thorough crew brief was always conducted when this occurred.

In my case, I was called the same day and asked if I was available to fly. Of course, I was eager to accept the mission but was apprehensive because I had never met the PC, nor did I know anything about this flight. The only information I had was how long I had until takeoff and where the PC would meet me. This was the first red

“However, as we **BEGAN** the **FLIGHT**, the PC started going through the **STARTUP PROCEDURES WITHOUT** using the **CHECKLIST.**”

flag for this mission; an inexperienced aviator wasn't given adequate time to plan or prepare for the flight.

The second red flag came in the form of a proper crew briefing. I gathered my equipment and headed to the company area to find the PC and introduce myself to him. He was obviously in a hurry and asked if I would be his co-pilot for the day. When I said I would, he handed me

a risk assessment worksheet (RAW). I vigorously worked on the RAW and rushed it to the PC. He glanced over it, apparently satisfied with the work I had done. He made minor corrections and told me to meet him at the aircraft to begin the preflight. He stated we were running late and he would join me at the aircraft. The PC's sense of urgency also added to

the stress, especially since there hadn't yet been a formal crew brief or a mission overview.

I used the checklist and conducted what I thought to be a thorough preflight. The PC arrived several minutes later and grabbed the aircraft logbook and began to walk around the aircraft for a final glance. We strapped in and I immediately felt nervous. I was inexperienced and used to being double-checked and questioned after every preflight. Though the PC was not at fault for assuming I was able to preflight the aircraft, I thought he had assumed too much of my abilities.

### Dangers Seen During The Flight

We buckled up and were ready to start the aircraft. Under normal circumstances, the aircraft is started using a checklist. Technical Circular (TC) 1-237, *Aircrew Training Manual, Utility Helicopter, H-60 Series*, states that each crewmember will complete the required checks pertaining to his assigned crew duties per the appropriate operator's manual/checklist. However, as we began the flight, the PC started going through the startup procedures without using the checklist.

I had an immediate feeling that something wasn't right. I remembered the brigade commander hosting a pilots' class in which he expressed his disappointment in aviators not using the checklist. With the understanding that we were in a rush, I didn't question the actions of the PC. This PC had twice as much experience as I did, so who was I to question right from wrong?

We started the aircraft and were en route to pick up our passenger. During the flight, everything went

smoothly. We were on time to pick up the passenger, and I began to feel more comfortable with the PC—so much, in fact, that I thought my own insecurities had made me feel uncomfortable. We dropped off the passenger without any issues.

As we were returning to base, the PC asked if I wanted to do a roll-on landing. Generally, I had only done this maneuver with an instructor pilot. Therefore, I told the PC I was OK with performing a roll-on landing. He had the controls and stated he would perform the maneuver. According to TC 1-237, the pilot not on the controls will verify the brakes are released before starting the approach. This is a critical part of the maneuver and is acknowledged in the before landing check in the UH-60; however, we weren't using the checklist. The PC began the maneuver and I, being very inexperienced and unfamiliar with the maneuver, missed the most critical step—to release the parking brake.

We landed with the parking brake still applied, and the aircraft touched down fast and started to skid and shutter. We slid for about three to five seconds before the PC realized the parking brake was still applied. He immediately released the brakes and regained control of the aircraft. It was not until after the flight I realized we were truly lucky the aircraft wasn't damaged and, more importantly, we weren't killed.

Upon completion of the flight, the crew was unusually silent during the postflight. We tied down the aircraft and parted ways. The final mistake of this flight was there was no postflight briefing or after-action review to discuss what we could've done better during the flight. I accepted this as the way things were done in his company and went on my way.

### Conclusion

This flight was a clear example of the importance of having a good crew mix in the cockpit. There were warning signs throughout the mission that required the crew to take action immediately. This crew had never flown together before. The PC should've conducted a thorough crew briefing and not assumed the experience level of his co-pilot. Ultimately, when something goes wrong in flight, the PC is responsible. By the same token, I should've inquired the specifics of this mission from the PC.

During the startup procedures,

## DID YOU KNOW

According to the U.S. Army Combat Readiness/Safety Center Web site, there were 94 Class A through Caviation accidents in fiscal 2006. Figure 1 shows a decrease in Class A and C accidents when comparing fiscal 2005 to fiscal 2006. What this chart doesn't depict are the factors associated with these

I was just as responsible for following the checklist as the PC. I should've insisted things be done correctly, like slowing down and observing the steps in the checklist. Being short on time doesn't mean safety should be sacrificed.

During flight, I should've spoken to the PC and expressed my concerns. The more relaxed environment could've allowed the PC to acknowledge the comfort level of the crew and act accordingly. The same holds true for the roll-on landing; it was my responsibility as a readiness level-1 (RL-1) aviator to be familiar with all RL-1 maneuvers.

If I were not comfortable with the maneuvers to be executed during the flight, I should have spoken up.

Although the PC was more experienced than I, there was no reason for me not to speak up when things were going wrong. I assumed too much about the role of the PC and not enough about my role as a crewmember. I could've mitigated much of the risk just as easily as the PC. Though the PC is ultimately responsible for the cockpit, we all are responsible for following the proper procedures. At the least, the crew as a whole should've spoken up and stated there was no way for

us to safely accept this mission.

The PC's company commander later flew an aircraft the PC had previously flown. The commander noticed the aircraft had not been shut down properly, which immediately signaled the PC had not used the checklist. This, along with other complaints in the company about this PC being unsafe, eventually led to his removal from the unit. <<

*Editor's note: Someone always knows. Don't just stand by if that someone is you. Engage! Do the right thing and prevent an accident from occurring.*

## KNOW?

figures. Understanding the war in Iraq has contributed to these numbers, these accidents are accepted as a necessary byproduct of war. However, one cannot ignore the fact that, even in war, high-risk aviators exist. Training Circular 1-210, *Aircrew Training Program Commander's*

*Guide to Individual, Crew, and Collective Training*, states self-discipline is critical to mission accomplishment and for an effective composite risk management program. It's everyone's responsibility to mitigate as much of the risk as possible on their individual level.

### Aviation Accidents (Flight)

Accident Category	Number of Accidents			
	2007	Fiscal 2006	2005	3-Year Average
Flight Class A	27	20	29	25
Flight Class B	10	17	18	15
Flight Class C	63	56	69	63
Total Flight	100	93	116	103

Figure 1. These figures represent only the Class A through C accidents recorded during fiscal 2005 through 2007, not the cause of the accident (i.e., pilot error, mechanical failure or environment). Statistics are current as of Jan. 9, 2008.



# It Only Works When You Wear

**LT COL. DAVID HENRY AND MAJ JAMES BLAIRIDGE**  
U.S. Army Center for Health Promotion and Preventive Medicine  
Aberdeen Proving Ground, Md.

**C**ombat-related eye injuries and the quality of life faced by Soldiers blinded on the battlefield have recently become popular topics in national newspapers and on Capitol Hill. Although the number of Soldiers that have lost their eyesight on the battlefields of Iraq and Afghanistan is low, the impact of their injuries is significant. Indeed, life without the use of eyesight is an outcome few of us wish to consider, so it is critical we use protective measures and equipment that minimize the risk of injury.

There are numerous sources of eye injuries both on the battlefield and in garrison: projectiles, improper and unauthorized contact lens use, ultraviolet radiation, thermal energy, chemicals and lasers. The U.S. Army Center for Health Promotion and Preventive Medicine has examined eye injury data for more than 20 years and reports that injuries from projectiles are the leading cause of eye injury in military populations. Further, a 10-year study released by the U.S. Army

Combat Readiness/Safety Center in 1998 indicates that more than 90 percent of the Soldiers who sustained an eye injury either wore no eye protection at all or did not wear the appropriate eye protection for the mission. The most common projectile injuries arise from objects traveling at relatively low to moderate speeds. These injuries could be prevented with proper eye protection designed to meet industrial impact standards.

In current combat

operations, the most dangerous projectiles arise from explosions. An explosion will release thousands of small fragments of bomb material and surrounding debris that travel at high speeds. Because of their high velocity, these small projectiles can cause significant damage to the soft tissues of an exposed eye. For this reason, Military Combat Eye Protection (MCEP) is required to exceed industrial impact safety standards. Specifically, MCEP spectacles are six times more

impact resistant and MCEP goggles are five times more impact resistant than their industrial equivalents.

Program Executive Office-Soldier manages the MCEP program by







17

## » DID YOU KNOW?

Soldiers may purchase additional Military Combat Eye Protection at AAFES Post Exchanges and Military Clothing and Sales Stores. Look for this green sticker on the eyewear's package to ensure you are purchasing Authorized Protective Eyewear.

AUTHORIZED  
PROTECTIVE  
EYEWEAR  
LIST (APEL)  
APPROVED



ensuring all devices on the authorized protective eyewear (APEL) list meet these higher military ballistic impact standards. Currently, there are five goggle systems and seven spectacle systems on the APEL. Four of the spectacle systems and two of the goggle systems use prescription lens carriers that can be ordered through your local optometry clinic. Each product carries its own national stock number so it may be purchased by the unit for

training, and each Soldier will receive one spectacle system and one goggle system through the rapid fielding initiative before a deployment. Additionally, individuals may purchase their own MCEP at AAFES Post Exchanges and Military Clothing and Sales Stores. Look for a green APEL sticker on the eyewear's package to ensure you're purchasing authorized

## DO YOU SEE

**W**hen I was coming up through the ranks as a young mechanic, I learned a valuable lesson from the officer in charge of a direct support maintenance shop. One day, I approached this crafty senior warrant officer to discuss coming to work for him. As he listened to me, he casually pulled out his handkerchief, removed his glasses and unexpectedly popped out his glass eye into a white handkerchief and began to clean it. Needless to say, I was speechless and just stared with my mouth hanging open. After he finished cleaning his eye, he put it back into the empty socket, replaced his glasses and said, "I will see what I can do."

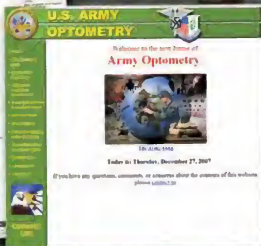
It took a month before I finally got the courage to ask Chief how he lost his eye. He told me it happened when he doing hands-on training during his Warrant Officer

Advanced Course. One day, as he left the work area to get a cup of coffee, he lifted his goggles up onto his forehead. At the same time, a sledgehammer that another student was using shattered into pieces. As the warrant officer walked out of the area, a shard from the hammer flew across the room and struck him in the eye, slicing it open. His tragic story forever changed my perspective on eye protection and taught me a very valuable lesson: keep your eyewear on at all times whenever you're in a work area.

Data collected by the Program Manager Soldier indicates about 10 percent of all Soldier injuries involve the eye. Soldiers and

## DID YOU

The main difference between safety glasses and regular glasses is their resistance to impact. The American National Standards Institute, which sets standards for safety glasses, requires them to withstand



protective eyewear. For those who wear glasses, make sure you order the appropriate prescription lens carrier from your local optometry clinic each time you are issued or purchase new protective eyewear.

There are many sizes and styles of MCEP to meet the individual Soldier's needs in fit, form and function. Each of these products provides ample protection against projectile injuries. So, whether you are on the battlefield, weed-

whacking your lawn or in the automotive craft center performing an oil change, use your authorized MCEP. Eye protection only works when it is worn and MCEP is the best available. <<

To download a copy of the Authorized Protective Eyewear List, please visit <https://peosoldier.army.mil/pmseq/eyewear.asp> or <http://chppm-www.apgea.army.mil/doem/vision/Army/default.asp>.

# WHAT EYE SEE?

**CHIEF WARRANT OFFICER 3(P) DAVE MUEHLESEN**  
U.S. Army Combat Readiness/Safety Center  
Fort Rucker, Ala.

## Maintenance-related injuries

Injury Type	Fiscal			
	2004	2005	2006	2007
Fingers	19	18	31	15
Eyes	9	15	20	3
Hands	11	13	11	5
Head	8	11	8	7
Arms	5	4	15	1
Other	85	57	43	11
<b>Total</b>	<b>97</b>	<b>113</b>	<b>129</b>	<b>62</b>

As of Sept. 30, 2007

civilians working in maintenance areas should be using some form of eye protection whenever they are in their shops and respective work areas.

In our motor parks and maintenance bays, eye injuries

predominantly occur during battery maintenance, welding or grinding operations, or from metal fragments created by activities such as hammering or using bolt



standards for strength and heat resistance. The Program Manager Soldier has an approved list of eye protection for Soldiers to use.

cutters. In more than one-third of the reported eye injuries, the individual was either not wearing the required protective eyewear or was wearing it improperly.

From fiscal 2004 through 2008, there were 47 reported cases in which Soldiers conducting maintenance-related tasks lost sight in one or both eyes, or were temporarily blinded and lost time from work because of their injuries. Hazards from dust and debris, flying objects or particles that can strike you in the face or eyes can be easily defended by using the proper safety glasses and goggles.

Various activities require different types of glasses or goggles. So what is the right protection and when should certain types be worn? Well, for starters, safety goggles are an appropriate substitute for safety glasses and can provide better overall protection. However, safety glasses are not an

appropriate substitute for safety goggles. Here's why: safety glasses are effective for deflecting a direct impact from flying objects such as nails, metal shards, etc. Goggles give added

## FYI

Did you know that even if you use a face shield in operations such as grinding, you also still need to wear safety glasses under the shield?



protection against dust and fine particles, splashing of liquids and high wind/gusting conditions.

No matter how routine the task or how low the risk, wearing the right eye protection for the job is the best defense against an accidental eye injury or loss. Whether in the motor pool or on a combat logistics patrol, protecting your eyes is as easy as it is smart. <<

## DO YOU KNOW?

the impact of a quarter-inch steel ball traveling 150 feet per second. You can't depend on prescription glasses for that kind of protection. Frames stamped with the imprint "Z87" meet stringent

# DON'T Fall in Love With the Plan

U.S. ARMY COMBAT READINESS/SAFETY CENTER  
Fort Huachuca, Ariz.

**T**he mission was a multiship, long-range navigation flight. The lead crew planned the flight as a day-out, night-vision-goggle-return, to practice assault mission tasks and flying in the national airspace system. The flight lead pilot in command (PC) was enthusiastic about the opportunity to depart the home station restricted area and navigate with a time on target. This was his second flight as a PC in the aircraft and his first as flight lead.

The air mission commander (AMC) and unit trainer for tactics in Chalk 2 was one of the more experienced pilots in the company with more than 1,153 hours, of which 800 were combat hours in Iraq. He had 36 hours of combined hood and weather time, but his last three instrument annual proficiency and readiness

tests had been completed in the synthetic flight training simulator. The pilot in Chalk 2 was a newly progressed Readiness Level-1 aviator with more than 515 hours, of which 225 were combat hours. He had flown 26 hours of simulated weather using the hood, but he had never actually flown in instrument

meteorological conditions (IMC) conditions in a rotary-wing aircraft. The unit had a high operations tempo, trying to meet external taskings while simultaneously transitioning to the UH-60M aircraft. Most of the chief warrant officers 3 and 4 were in the UH-60M transition or performing external mission taskings.



The lead crew requested a DD175-1 weather brief from the local forecaster, indicating a direct route of flight between two airfields; however, their planned route actually went farther south over hilly terrain and was not articulated to the weather briefer. The worst-case weather for the flight was indicated in the en route portion of the DD175-1 and listed the lowest ceiling as 2,000 feet above ground level (AGL), which would have been accurate for a straight-line route between airfields. The crews' focus was on the destination terminal area forecast, which was for 5,000-foot ceilings and visibility at five miles. The flight completed the briefing and the risk assessment worksheet, which assessed the mission as a low risk. The company instructor pilot (IP), who recently graduated from the IP Course, briefed the AMC and signed the risk assessment worksheet. The company commander, the pilot (PI) of Chalk 2, signed as the final mission approval for the flight. The crews completed preflight and began aircraft run up. During run up, Chalk 3 noticed their very high frequency omnidirectional receiver was nonoperational and notified the AMC.

The flight took off on time. However, on arrival

at the first checkpoint, Chalk 3 reported his global positioning system (GPS) was also nonoperational. Chalk 3 was now without a VHF omnidirectional radio and a GPS. The flight proceeded normally with lead making his checkpoints on time. The flight did a simulated air assault troop insertion at an airport along the route, arriving within two seconds of their planned time.

The flight then departed to the south and the terrain began to rapidly

about 300 to 500 feet AGL. The PC of Chalk 2 reported to the flight that an Airfield Weather Observation System station was reporting a ceiling of 2,200 feet. The field elevation at the airport in the valley behind them was 979 feet mean sea level (MSL). The flight continued on time to the next air control point in a valley.

The enlisted flight instructor in the lead aircraft asked for the flight formation to change from staggered right to staggered left

“... their **PLANNED ROUTE** actually **WENT FARTHER** south over hilly terrain and was **NOT ARTICULATED** to the **WEATHER BRIEFER.**”

rise in elevation. As the flight approached the mountainous terrain, the weather deteriorated. Cloud cover obscured the hilltops, visibility was reduced to less than four miles, and fog was noted in some of the low-lying areas due to a rain that had recently fallen as a cold front pushed through. The flight reduced altitude to

so the crew chief he was progressing could practice performing Training Circular 1-237, *Task 1026: Maintain Airspace Surveillance*. Chalk 2 said they would change the formation as soon as their crew chief changed seats so he could be on the observed side of the aircraft. The formation changed from staggered right to

staggered left, which left an untrained, unqualified trainee in the seat facing the staggered-left formation.

After crossing the aircraft control point (ACP) in the valley, the weather deteriorated considerably. Wispy clouds scudded across the sky at flight level while low clouds and haze obscured the hilltops. Chalk 3 noticed the change in conditions and separated from the formation by a distance of eight to 10 rotor disks in case lead went into IIMC. Chalk 2 noticed a set of power lines on the ridgeline

to the right of the formation and informed the flight by radio. Lead acknowledged and continued up a draw between the hilltops at 110 knots ground speed. The lead aircraft altered course to the left to avoid the wires and high ground on the right side of the flight path. When the lead aircraft reached the top of the draw, they went IIMC. They then announced the heading and altitude they were climbing to, which was 4,000 feet MSL.

Chalk 2, still in a staggered-left formation three rotor disks away and slightly

lower than the lead aircraft, announced they were also IIMC. The Chalk 2 PI asked lead what heading and altitude they were climbing to. Lead answered 4,000 feet, with a heading of 124 degrees. The lead aircraft initiated a climb, still squawking 1,200 on the transponder, and attempted to contact destination approach control. Chalk 3 saw Chalk 2 go IIMC and initiated a climbing left turn. Chalk 3 executed a hard left 180-degree turn, remained in visual meteorological conditions, and proceeded back down the draw to



the vicinity of the previous ACP. Chalk 3 announced his intention to remain visual meteorological conditions and return to their last known position. Lead contacted Chalk 3 to see if they had contact with Chalk 2. Both lead and Chalk 3 heard a short, garbled, unintelligible transmission. Lead announced their intention to recover IMC to the destination airfield. Shortly afterward, Chalk 2, in a steep nose-down attitude and left bank, crashed through a large set of power lines into the ground at cruise airspeed, fatally injuring three Soldiers.

### Summary

Weather conditions were a key factor in this accident. An hour earlier, a frontal system passed through the area and dumped a large volume of rain in the rapidly rising terrain. Precipitation fog may form if rain passes through a layer of cooler air or if falling precipitation cools the ambient air to its dew point. Fog of this nature frequently occurs during the passage of warm fronts and cold fronts, when the surface air is markedly different in temperature from the upper air. This effect is

further enhanced by local topography. If rain-cooled air (or air associated with a cold downdraft) is unable to spread out horizontally, the ambient temperature is more likely to cool to, and remain close to, the local dew point throughout the depth of the column. So, while widespread fog may not be reported in a nearby official observation, it is entirely possible for localized thick fog to persist in low-lying areas following rain showers. Sun angle, coupled with cloud cover or fog and with the complex terrain, could have also exacerbated the situation.◀

## LESSONS LEARNED

- Give the weather forecaster the most accurate route of flight. Doing so will give you a better quality briefing. Read Appendix C of Field Manual 3-04.240, *Instrument Flight for Army Aviators*, to better understand the blocks on the DD 175-1.
- Practice inadvertent instrument meteorological conditions (IIMC) breakup procedures during multiship training events. This will help develop good

cockpit organizational skills and procedures, as well as provide training for air traffic control in recovering formations during weather events. Ensure IIMC plans address all segments of the route and identify the proper Air Route Traffic Control Center you need to contact if you go IIMC. When possible, ensure instrument annual proficiency and readiness tests are taken in the aircraft to ensure crews are familiar with the sounds

and illusions experienced in the actual aircraft.

- Put experienced aviators in the critical positions during the flight to demonstrate what “right looks like” versus the view/duties from right seat to junior aviators. Develop flight leads from experienced pilots in command (PC). Develop PCs within the formation and move them to positions of increased responsibility as they mature.

- Don’t fall in love with the plan. Plans are a good starting point; however, pilots must be aware of changing conditions and modify their mission plans as the situation changes. The crew in flight lead was focused on making times at the aircraft control points. They never adjusted for the deteriorating weather. Going 110 knots into lousy weather is never a good plan. Never outfly your weather.

# NOT THIS

CHIEF WARRANT OFFICER 3 MARCELO ASSUMPCAO  
U.S. Army Combat Readiness/Safety Center  
Fort Rucker, Ala.

**R**ollover claims two Soldiers' lives. How many times have we seen a preliminary loss report with a headline like the one above? For me, it's all too often. Fortunately, in the following accident, engaged Leaders took the necessary steps to prevent their Soldiers from becoming statistics.

The Soldiers mounted their M936 wrecker, which was equipped with add-on armor, for a 15-hour convoy to recover a disabled vehicle in Afghanistan. Before the mission, the wrecker crew rehearsed rollover drills and prepared to move. After traveling 20 kilometers from their forward operating base, a narrow mountain road gave way beneath the rear wheels of the wrecker and the vehicle rolled over twice, coming to rest on its roof.

What followed? Well, there wasn't a Class A accident for the U.S. Army Combat Readiness/Safety Center or a local safety board to investigate. More importantly,

the command didn't have to send a letter to Family members telling them their loved one was killed or seriously injured. Instead, Families can look forward to a reunion with their loved ones as opposed to a funeral.

Although the M936 was destroyed, the Soldiers emerged from the vehicle without a scratch because they wore their seat belts and executed proper emergency procedures. Engaged Leaders and Soldiers made a difference in this accident. Here are some things Soldiers can do to mitigate the risk of being killed or injured in a vehicle accident:

- Perform route recons to ensure

roadways are solid, particularly after rain

- Ensure Soldiers do not operate vehicles too close to the shoulder of the road

- Use more experienced drivers during limited visibility or when operating on dirt roads along waterways

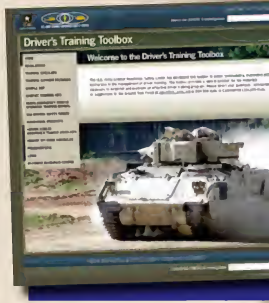
- Rehearse rollover drills; the HMMWV Egress Assistance Trainer is highly recommended

- Ensure Soldiers wear their seat belts to prevent injury and maintain situational awareness

- Emphasize crew coordination, particularly in identifying and reacting to hazards

The Soldiers involved in this

accident took the time to properly prepare for their mission. The result? They all survived an accident that easily could have taken their lives. Keep your Soldiers informed and ready at all times. Army Safe is Army Strong! <<



# S TIME!

## » FYI

If your vehicle does not have established tactics, techniques and procedures for rollovers or emergency egress, use Graphic Training Aid 55-03-030, *HMMWV Uparmored Rollover Emergency Procedures Performance Measures*, as a base. These procedures apply to most wheel vehicles. You can find this GTA on the U.S. Army Combat Readiness/Safety Center Web site at <https://crc.army.mil/drivertrainingtoolbox>.



# Identify the risk or the remains

**E**very so often you see something so incredibly dangerous you just have to stand there dumbfounded. What's even more astounding is watching other people completely oblivious to the danger repeatedly exposing themselves to the hazard. I recently had one of those moments at a gym.

I walked into the men's locker room to see water splashed all over the tile floor. In places, the water stood in puddles. I hate suiting up while standing on a wet floor, so I started rounding a corner on my left to check out another row of lockers—maybe one where the floor wasn't wet. I was just about to take a step when something caught my attention. On the floor in front of me was an electric fan roaring at full speed. What really got my attention was that the fan—and about 3 feet of its power cord—was sitting in a puddle of water. I immediately caught myself to avoid stepping forward. A young Soldier, barefoot and headed for the men's showers, was just about to walk past me. I caught him and pointed out the danger on the floor. It was clear he hadn't noticed it, and it shocked him (if you'll pardon the pun) to realize the danger he'd nearly stepped into. With him alerting others to the danger and staying clear of the wet floor, I carefully reached down, turned off the fan and then unplugged it.

A couple of questions immediately ran through my mind. First, who would set an energized electrical fan in a puddle of water where people were walking? Second, why were people walking through this puddle of water, totally oblivious to an obvious danger?

It occurred to me that most people don't think a lot about what they're doing if

they're in a familiar environment. Often, they're so focused on something else that they don't catch the clues around them. Without meaning to, they skip the first step of composite risk management—identifying the hazards.

What are the common things people say after an accident? "I didn't know that would happen." "I didn't mean to do it." "It came as a surprise." The list of excuses is long. But, in most cases, the accident could have been avoided if the people involved maintained situational awareness—basically, kept their head in the game.

It's too easy not to do that. It's too easy to have your mind focused somewhere else while the silent alarms go off around you. Especially in

those routine things where you don't expect things to go wrong, it's easy to walk blindly into danger. It

sounds odd to say it this way, but you're basically NOT looking for trouble.

Nobody got hurt at the gym—which was fortunate. However, luck is a lousy fall-back position for safety. Typically, luck works just long enough to lull us into a false sense of security and then runs out. And when it does, we often get taken out of the game—permanently.

So we're back to the subject of risk identification. Truth is, it's always somewhere in the mix. The way I see it, you get two shots at identification—one before a potential accident and the other if things don't go so well. Personally, I like the first option. I'd prefer spending time identifying my risks than someone else spending time identifying my remains.

How about you? <<

## IN THEORY

**LAWRENCE J. BELL**  
U.S. Army Combat Readiness/Safety Center  
Fort Rucker, Ala.

**T**he training directorate for the USACRC has recently completed a new program for the online Combat Readiness University. The course is titled "Introduction to Theories of Accident Prevention" and includes two major segments: the history and development of the theoretical basis of accident causation and the more recent models of accident causation. These two segments offer an overview



# KS S?

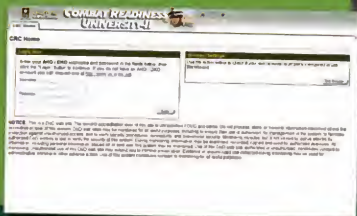
**BOB VAN ELSBERG**  
U.S. Army Combat Readiness Safety Center  
Fort Rucker, Ala.

## LEARNING BLACKBOARD

**T**he Combat Readiness University (CRU) is transitioning to the Army Training and Support Center Blackboard Content Learning Management System. When Blackboard goes online, CRU will change its name to Combat Readiness University II (CRU II). The majority of Department of Defense schools, as well as many colleges and universities throughout the world, use Blackboard. This change will make CRU II user-friendly, standardize

it with other Army online training systems and enable users to develop custom learning environments. However, for safety and training managers, CRU II will not initially support database searches to determine who in your organization has completed training. That data will have to be

tracked at home station. Courses completed on the CRU will not be transferred to CRU II. Therefore, the CRU will continue to allow users to print their certificates and safety managers to search the database for user course status. To check out CRU II online, go to <https://crcl.learn.army.mil>. <<



# RY...

of accident causation and provide accident investigators with concepts to help them understand the conditions leading to accidents. In the near future, the USACRC will have a third segment that explains in greater detail how safety professionals can use causation theory in their organizational mishap prevention and intervention programs. This course provides tools geared to each student's style of learning, whether

that is auditory, visual or kinesthetic and tactile. It also makes unique provisions for varying levels of knowledge concerning accident causation theory called "knowledge gates." Each time a student begins an intermediate segment, they will have an opportunity to take a pretest on that information. If they do well, they can choose whether to continue with that portion of the course. If they do poorly, their only option is to proceed through the "gate" and take that portion of the training. Because of the course's

complexity, it contains large digital files and will require students to have either high-speed or broadband Internet access. Where that is not available, the USACRC will provide students with a compact disc version of the course to study. They can then take the end-of-course examination online with only dial-up Internet access.

Civilian Career Program 12 intern students and Aviation Safety Officer Course students are the principal audiences for this new course. These students will be required

to successfully complete the course prior to their in-residence training at Fort Rucker. However, the course is not just appropriate for these new safety professionals, it can also be a valuable tool for experienced safety professionals, Army leaders and unit commanders, resource managers, Soldiers and civilians.

The course will be available online at <https://safetylms.army.mil/>. For more information on the course, contact the USACRC at (334) 255-0229 or DSN 558-0229. <<



# LOST

## AVIATION

### AH-6



#### CLASS C

M Model

■ The aircraft experienced an overtorque (126.3 percent) condition during flight.

#### CLASS C

D Model

■ The aircraft's No. 2 engine power turbine speed failed to the high side while at a 5-foot hover. Main rotor speed went to 120 percent for five seconds. The main and tail rotors required replacement.

■ A bird struck the aircraft at 1,000 feet above ground level, causing damage to the night vision systems and aircraft interface assembly.

### CH-47



#### CLASS C

■ While loading passengers for an air assault mission, the Soldier's M-4 got stuck in the loading ramp, resulting in the refill module reservoir detaching from its mount.

**DURING PASSENGER BRIEFS, DO YOU ENSURE SOLDIERS UNDERSTAND TO KEEP THEIR WEAPON UNDER CONTROL WITH THE MUZZLE DOWN?**

■ The ramp tongue separated from the aircraft during flight.

### MH-47



#### CLASS C

E Model

■ The aircraft was taxiing to the runway when the right-rear landing gear collapsed, causing significant damage to both rear landing gears.

### MH-60



#### CLASS A

K Model

■ The Soldier exited the aircraft early during a night landing in brownout conditions at approximately 30 feet above ground level. The fall fatally injured the Soldier.

**OH-58****CLASS C D(R) Model**

■ During run-up, the aircraft exceeded engine limitations.

**UH-60****CLASS A A Model**

■ The aircraft crashed during a training flight, resulting in two Soldier and four Airmen fatalities. The accident is currently under investigation by the USACRC.

**C-12****CLASS B U Model**

■ During landing, the aircraft's propeller contacted the runway, resulting in loss of engine No. 2. Damages include: 3 feet of the wing outboard section bent up 30 degrees, left wing wrinkled and No. 1 engine inboard and outboard landing gear covers were bent.

**UAS****MQ-5B****CLASS A**

■ Immediately after takeoff, the aft section of the Hunter broke off, causing the UAV to fall 500 feet to the ground.

**GROUND****AMV****CLASS A**

■ A Soldier was killed when she lost control of the ambulance she was driving while negotiating an access ramp and struck a light pole.



**HAVE YOUR EMERGENCY VEHICLE OPERATORS COMPLETED AN EMERGENCY VEHICLE TRAINING PROGRAM AND ARE THEY RECEIVING THE REQUIRED SUSTAINMENT TRAINING?**

**CLASS B**

■ A Soldier suffered a permanent partial disability injury when he was pulled under the front tire of an M1114. The Soldier had been standing on the front hood/fender of the vehicle when the accident occurred.

■ A Soldier suffered a permanent partial disability injury when the M984A1 he was riding in overturned when the driver swerved to avoid a pothole. A fire ensued inside the vehicle, and the Soldier received burns to 10 percent of his body.



**HAVE YOU SEEN THE DRIVER'S TRAINING TOOLBOX ON THE U.S. ARMY COMBAT READINESS/SAFETY CENTER'S WEB SITE?**

■ A Soldier received a permanent partial disability injury to his arm when the 5-ton cargo truck he was riding in left the road and overturned. The driver of the truck suffered a skull fracture and is expected to fully recover.

■ A Heavy Equipment Transport vehicle was damaged when it overturned after experiencing brake failure. The vehicle was traveling as part of a Marine convoy and transporting an M1, which was also damaged. The driver of the vehicle was uninjured.

# ARMY AIRCRAFT LOSSES

Fiscal 2002 to Present  
April 2008



Hostile/Non-hostile

**AH-64A/D 12/50****U/MH-60A/L 8/27****C/MH-47 7/16****OH-58D 11/25****TOTAL 38/118**

# ARMY GROUND LOSSES

Fiscal 2008  
April 2008



Class A Facilities

**AMV 6/6****ACV 1/0**

**PERSONNEL INJURY 8/6**  
includes weapons handling accidents

**FIRE/EXPLOSION 3/3****PROPERTY DAMAGE 2/0****TOTAL 20/15**

## Personnel Injury



### CLASS A

■ A Soldier was killed and three others were injured in an explosion of unknown origin. The Soldiers were awaiting exfiltration via a CH-47 when the explosion occurred as the aircraft landed.

■ A Soldier was killed when a BLU-97 Combined Effects Bomb he was handling detonated. Another Soldier was injured in the blast. (See the related story "UXO: A Threat to Soldier Safety.")

### DO YOU KNOW THE THREE R'S OF EXPLOSIVES SAFETY?

■ A Soldier died while participating in physical training. The Soldier was running when he fell and hit his face on the pavement. Medics revived him twice, but efforts to stabilize him at the medical center failed and the Soldier was pronounced dead.

■ A Soldier suffered fatal injuries when he fell 8 to 10 feet from a front-end loader. The Soldier was attempting to climb from the loader onto a roof to provide realistic training.

■ A Soldier suffered a permanent total disability injury after participating in a PT test. The Soldier experienced deep cramps after the test and was diagnosed as having a spinal stroke. He is currently paralyzed from the waist down.

### CLASS B

■ A Soldier lost the tip of his left ring finger when the landing

leg on a fuel pump buckled and landed on his hand.

## DRIVING

### POV



### CLASS A

■ A Soldier was speeding when he lost control of his POV, struck a guardrail, went airborne and then hit some trees before his vehicle came to rest on its side. The Soldier was fatally injured.

■ A Soldier was driving his POV at high speed around a sharp corner when he lost control and crashed into a telephone pole. The Soldier was not wearing his seat belt.

■ A Soldier was riding as a passenger in a pickup when the driver missed a curve and the vehicle overturned. The Soldier was not wearing his seat belt and was thrown from the truck and killed. Two other passengers who weren't wearing their seat belts were also thrown from the vehicle and suffered serious injuries.

# UXO: A T

CHRIS FRAZIER  
U.S. Army Combat Readiness/Safety Center  
Fort Rucker, Ala.



HAVE YOU TOLD YOUR SOLDIERS THAT WEARING SEAT BELTS INCREASES THEIR CHANCES OF SURVIVING A ROLLOVER CRASH IN A PICKUP BY NEARLY 80 PERCENT?

■ A Soldier was speeding through an intersection in his sport utility vehicle when he lost control and struck a static tank display. The Soldier was pronounced dead upon arrival at the on-post medical facility.

## POV DRIVING LOSSES

through December 2007 Class A accidents/Soldiers killed

CARS	11/11
SUV/JEeps	4/5
TRUCKS	3/3
MOTORCYCLES	10/10
OTHER*	2/2

\*Includes: vans and ATVs

# 31

## TOTAL DEATHS

07: 28 3 year average: 29





# THREAT TO SOLDIER SAFETY



**POM**



## CLASS A

■ Soldier was operating his motorcycle at a high rate of speed when he lost control, went off the road and struck a light pole. The Soldier was pronounced dead at a local medical center. The Soldier, who had completed Motorcycle Safety Foundation training, chose not to wear his helmet. The helmet was found attached to his motorcycle.



**WHO KNEW HE WAS A HIGH-RISK SOLDIER? COULD A FRIEND HAVE DONE SOMETHING TO PREVENT THIS CRASH?**

■ A Soldier was operating his motorcycle when he lost control, struck a tree and suffered fatal injuries. The Soldier was wearing his helmet at the time of the accident.

A recent unexploded ordnance (UXO) accident in Iraq that claimed the life of a Soldier is serving as a deadly reminder to be extra cautious when handling munitions.

The Soldier was digging in front of his quarters when he discovered a yellow cylinder resembling a caulk tube. Once the Soldier brought the tube out of the ground, he banged it against a wall to knock off the dirt and determine what he was holding. The device, which turned out to be a BLU-97/B Combined Effects Bomb, exploded, killing the Soldier and wounding another.

The BLU-97 submunitions are yellow, soda-can-sized bomblets that are dispensed in large numbers to attack "soft" area targets. The bomblet case is made of scored steel designed to break into about 300 preformed ingrain fragments for defeating light armor and personnel.

The body of the BLU-97 is cylindrical in shape, about 20 centimeters long and has a 6 centimeter diameter. However, military and foreign munitions can come in a variety of types, sizes and shapes and may not be easy to recognize. They include, but are not limited to, small-arms

ammunition, projectiles, cartridges, bombs, rockets, pyrotechnics, grenades, blasting caps, fuzes, simulators and raw explosives.

According to the Defense Environmental Network and Information Exchange, when encountering UXO, always follow the 3Rs of explosives safety:

- **Recognize the munition.**
- **Retreat from the munition. Do not touch or disturb it, but move carefully away, walking out the same path the area was entered.**
- **Report the munition and its location.**

Since fiscal 2005, there have been three Class A Army accidents resulting from Soldiers handling UXO. These accidents caused the deaths of three Soldiers. By following the 3Rs of explosives safety, Soldiers can help prevent future fatalities. In combat areas or on training ranges, it's best to remember, "If you did not drop it, do not pick it up!"

*For more information on UXO safety, visit the Defense Environmental Network and Information Exchange's UXO Safety Education Program Web site at [www.denix.osd.mil/uxosafety](http://www.denix.osd.mil/uxosafety).*



# Authorized

# Protective Eyewear List



ESS Low Profile NVG  
(Rx capability)  
(4240-01-540-5585)



ESS Land Ops  
(may be worn over glasses)  
(4240-01-504-0022)



UVEX XC  
(Rx capability)  
(4240-01-516-5361)



Arena Flakjak  
(4240-01-548-7366)



ESS Vehicle Opt  
(may be worn over glasses)  
(4240-01-525-5101)



Oakley SI Ballistic  
M Frame 2.0  
(4240-01-525-3095)

# Eye See

Eye injuries account for over 10 percent of combat-related injuries. The most common causes are explosives (IED, RPG and shrapnel) or environment (foreign body). Eye injuries have increased in every conflict and continue that trend.

For more information on the authorized protective eyewear list, visit <https://peosoldier.army.mil/pmseq/eyewear.asp>



U.S. ARMY



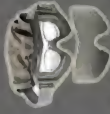
U.S. ARMY COMBAT READINESS/SAFETY CENTER

<https://cra.army.mil>

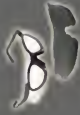
ARMY STRONG.



Revision Sawfly  
(Rx capability, Dual Size)  
(4240-01-527-4051 reg)  
(4240-01-527-4018 I/O)



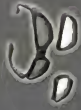
Revision Desert Locust  
(Rx capability)  
(4240-01-547-6216)



ESS ICE  
(Rx capability, Dual Size)  
(4240-01-525-5085 ICE 2)  
(4240-01-537-6143 ICE NARO)



UVEX Genesis  
(Rx capability)  
(4240-01-552-4131)



Wilox X SC1  
(4240-01-504-0394)



Wilox X PT-1  
(4240-01-510-7853)

ARMY SAFE  
IS ARMY STRONG



# Family

family engagement kit

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to take an ac  
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Family

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